
New Combinations and Synonyms in Chinese *Pyrenaria* s.l. (Theaceae)

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ABSTRACT. Six new combinations in *Pyrenaria* (Theaceae) are made. These are: *Pyrenaria spectabilis* (Champion) C. Y. Wu & S. X. Yang, *P. spectabilis* var. *greeniae* (Chun) S. X. Yang, *P. maculatoclada* (Y. K. Li) S. X. Yang, *P. wuiana* (Hung T. Chang) S. X. Yang, *P. jongquieriana* Pierre ex Lanessan subsp. *multisepala* (Merrill & Chun) S. X. Yang, and *P. diospyricarpa* Kurz var. *camelliiflora* (Kurz) S. X. Yang. *Pyrenaria burmanica* T. K. Paul & Nayar newly synonymizes to *Pyrenaria diospyricarpa* var. *diospyricarpa*. *Pyrenaria tibetana* Hung T. Chang newly synonymizes to *Pyrenaria khasiana* R. N. Paul. *Thea shinkoensis* Hayata and *Tutcheria tenuifolia* Hung T. Chang newly synonymize to *Pyrenaria microcarpa* (Dunn) H. Keng var. *microcarpa*. *Camellia buisanensis* Sasaki, *Tutcheria symplocifolia* Merrill & F. P. Metcalf, and *Tutcheria taiwanica* Hung T. Chang & S. X. Ren newly synonymize to *Pyrenaria microcarpa* (Dunn) H. Keng var. *ovalifolia* (H. L. Li) T. L. Ming & S. X. Yang. *Tutcheria brachycarpa* Hung T. Chang newly synonymizes to *Pyrenaria spectabilis* (Champion) C. Y. Wu & S. X. Yang var. *spectabilis*. *Tutcheria austrosinica* Hung T. Chang, *Tutcheria rostrata* Hung T. Chang, and *Pyrenaria turbinata* S. X. Yang newly synonymize to *Pyrenaria spectabilis* (Champion) C. Y. Wu & S. X. Yang var. *greeniae* (Chun) S. X. Yang. In addition, *Pyrenaria microcarpa* (Dunn) H. Keng is lectotypified.

Key words: China, *Pyrenaria*, Theaceae.

Keng (1980), Yang (1997), and Chang (1998) have published regional taxonomic revisions of the Malesian and Chinese *Pyrenaria* Blume and *Tutcheria* Dunn (Theaceae). Keng (1972) first reduced *Tutcheria* into *Pyrenaria*. Yang and Ming (1995a, 1995b) and Yang (1997) supported Keng's (1972) opinion and further reduced *Parapyrenaria* Hung T. Chang into *Pyrenaria*. A worldwide taxonomic revision of *Pyrenaria* s.l. has been carried out as a Ph.D. dissertation by the author (Yang, 2000) in which the more than 90 specific and infraspecific epithets are reduced to 25 species, including two subspecies and ten varieties. A detailed mono-

graphic account of this genus will be forthcoming. Seven of the 13 *Pyrenaria* species that occur in China require one or more new combinations or other taxonomic treatment and are here published in order to make the names to available for the *Flora of China* Theaceae treatment.

1. *Pyrenaria diospyricarpa* Kurz, J. Asiat. Soc. Bengal. 42(2): 60. 1873. TYPE: Myanmar. Martaban, 15 Aug. 1872, S. Kurz 1023 (holotype, K).

Pyrenaria burmanica T. K. Paul & Nayar, J. Jap. Bot. 64(1): 8. 1989. Syn. nov. TYPE: Myanmar. Tensaseri, Humatee, 5000 ft., 10 Apr. 1877, Geo Gallatly 695 (holotype, CAL not seen; isotype, CAL).

Except for the non-foliaceous bractlets and sepals, *Pyrenaria burmanica* is morphologically indistinguishable from *P. diospyricarpa* var. *diospyricarpa*. With the observation of gradual transitions from non-foliaceous bractlets and sepals to foliaceous ones in my field investigations, the gap between both taxa is bridged.

1a. *Pyrenaria diospyricarpa* Kurz var. *diospyricarpa*

Distribution and habitat. Southern Yunnan, China; Myanmar; Thailand; Vietnam. Forests on hills, slopes, or valleys between 1000 and 2000 m (Yang, 1997).

1b. *Pyrenaria diospyricarpa* Kurz var. *camelliiflora* (Kurz) S. X. Yang, comb. et stat. nov. Basionym: *Pyrenaria camelliiflora* Kurz, J. Asiat. Soc. Bengal. 40(2): 46. 1871. TYPE: Myanmar. Martaban, Doyokee pass, 4000 ft., D. Brandis s.n. (holotype, CAL not seen).

This taxon is different from *P. diospyricarpa* only by its branchlets and leaves with less pubescence. It is more acceptable to treat it as a variety.

Distribution and habitat. Myanmar; Thailand; Vietnam. Forests between 900 and 1500 m (Yang, 1997).

2. *Pyrenaria jonquieriana* Pierre ex Lanessan, Pl. Util. Colon. Franc., 295. 1886. TYPE: Laos. Attapeu Basin, western bank of Mekong, *Harmand 4005* (holotype, P).

2a. *Pyrenaria jonquieriana* Pierre ex Lanessan subsp. ***jonquieriana***

Distribution and habitat. Laos. Forests between 400 and 1700 m.

2b. *Pyrenaria jonquieriana* Pierre ex Lanessan subsp. ***multisepala*** (Merrill & Chun) S. X. Yang, comb. et stat. nov. Basionym: *Tutcheria multisepala* Merrill & Chun, Sunyatsenia 2(1): 41. 1934. *Parapyrenaria multisepala* (Merrill & Chun) Hung T. Chang, Acta Sci. Nat. Univ. Sunyatseni 18(3): 74. 1979. *Pyrenaria multisepala* (Merrill & Chun) H. Keng, Gard. Bull. Singapore 26(1): 134. 1972. TYPE: China. Hainan: Wanning (Manyun), Tungshanling, 5 Apr. 1932, *H. Y. Liang 61513* (holotype, IBSC; isotype, PE).

Except that it has more sepals (more than 20), *Tutcheria multisepala* is almost the same as *Pyrenaria jonquieriana*. Considering their disjunct distribution, it is suitable for us to treat them as different subspecies.

Distribution and habitat. Hainan, China. Forests between 800 and 1000 m.

3. *Pyrenaria khasiana* R. N. Paul, Bull. Bot. Soc. Bengal. 33: 115. 1979. TYPE: India. Meghalaya, Khasi hills, 675–1000 m, *S. Kurz 161* (holotype, CAL not seen; isotype, CAL).

Pyrenaria tibetana Hung T. Chang, Acta Sci. Nat. Univ. Sunyatseni 22(3): 64. 1983. Syn. nov. TYPE: China. SE Tibet, Medog, NW of Didongzhan, in evergreen forest, 3 Aug. 1974, *Qinghai-Xizang (Tibet) Exped. Acad. Sin. 74-1848* (holotype, PE; isotype, KUN).

No natural differences can be found between the type specimens of *Pyrenaria khasiana* and *P. tibetana*. It is thus inappropriate to treat them as different species.

Distribution and habitat. Southeastern Xizang (Tibet), China; northeastern India. Evergreen forest between 675 and 2100 m.

4. *Pyrenaria maculatoclada* (Y. K. Li) S. X. Yang, comb. nov. Basionym: *Tutcheria maculatoclada* Y. K. Li, Guihaia 4(1): 35. 1984. TYPE: China. Guizhou: Sandu, Yaorenshan, alt. 910 m, 8 Sep. 1982, *C. Z. Dang 2198* (holotype, HGAS).

Tutcheria maculatoclada has been reduced into *Pyrenaria greeniae* (Chun) Keng (Yang, 1997) or *Tutcheria greeniae* Chun (Chang, 1998). Its recognition as an independent species in *Pyrenaria* is based on its succulent pericarp.

Distribution and habitat. Northern Guangxi and southern Guizhou, China. Forests between 700 and 1000 m (Yang, 1997).

5. *Pyrenaria microcarpa* (Dunn) H. Keng, Gard. Bull. Singapore 26(1): 134. 1972. Basionym: *Tutcheria microcarpa* Dunn, J. Bot. 47: 197. 1909. TYPE: China. Guangdong: Boluo, Lo Fou Mountains, *Ford 610* (lectotype, designated here, IBSC).

Thea shinkoensis Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 45. 1911. Syn. nov. *Tutcheria shinkoensis* (Hayata) Nakai, J. Jap. Bot. 16(12): 708. 1940. TYPE: China. Taiwan: Taipeh, Shinko, Remogansha, 8 June 1906, *T. Kawakami & U. Mori 1324* (holotype, TI).

Tutcheria tenuifolia Hung T. Chang, Acta Sci. Nat. Univ. Sunyatseni 22(2): 108. 1983. Syn. nov. TYPE: China. Guangxi: Longzhou, Daqing Mt., near Nadian Village, 27 June 1957, *S. H. Chun 12833* (holotype, IBSC; isotype, KUN).

Dunn (1909) listed two specimens under *Tutcheria microcarpa* Dunn: *Ford 610* and *Hongkong Herb. 2058*. I checked them in IBSC. Both of them correspond to the protologue, but the first collection is in better condition, so it is selected as the lectotype here.

Thea shinkoensis was treated as a variety of *Pyrenaria microcarpa* based only on its description (Yang, 1997). I studied the type specimen of *T. shinkoensis* at TI and found that it shares almost all features with *P. microcarpa* except that a few leaves of *T. shinkoensis* are subacuminate.

Tutcheria tenuifolia is different from *P. microcarpa* in its obvious pedicel (7–8 mm long). In fact, the pedicel of *P. microcarpa* is variable, from 1 to 10 mm in length.

5a. *Pyrenaria microcarpa* (Dunn) H. Keng var. ***microcarpa***

Distribution and habitat. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Jiangxi, Taiwan, and Zhejiang, China; Ryukyu Islands, Japan; Vietnam. Forests in mountain valleys or along streams between 300 and 1000 m (Yang, 1997).

5b. *Pyrenaria microcarpa* (Dunn) H. Keng var. ***ovalifolia*** (H. L. Li) T. L. Ming & S. X. Yang, Chin. J. Appl. Environm. Biol. 3(3): 287. 1997. Basionym: *Tutcheria ovalifolia* H. L. Li,

J. Arnold Arbor. 25(2): 209. 1944. TYPE: China. Hainan: Baoting, in forest, 16 Nov. 1936, S. K. Lau 28218 (holotype, A; isotype, IBSC).

Pyrenaria buisanensis (Sasaki) C. F. Hsieh, S. Z. Yang & M. H. Su, *Taiwania* 49(3): 202. 2004. Syn. nov. Basionym: *Camellia buisanensis* Sasaki, *Trans. Nat. Hist. Soc. Form.* 21: 222. 1931. *Camelliastrum buisanensis* (Sasaki) Nakai, *J. Jap. Bot.* 16(12): 700. 1940. TYPE: China. Taiwan: Pingtung [Pingdong] Co., Mt. Jenlishan, 30 May 2004, K. T. Lee & Y. K. Wu s.n. (neotype designated by Su et al. (2004: 202), TAI).

Tutcheria symplocifolia Merrill & F. P. Metcalf, *Lingnan Sci. J.* 16(2): 172. 1937. Syn. nov. TYPE: China. Guangdong: Ta-pu, Tai Mo Shan, 16 July 1932, W. T. Tsang 21196 (holotype, IBSC; isotype, PE).

Tutcheria taiwanica Hung T. Chang & S. X. Ren, *Acta Sci. Nat. Univ. Sunyatseni* 30(1): 71. 1991. Syn. nov. TYPE: China. Taiwan: Pingtung [Pingdong] Co., Bankingsing, tree 20 ft., 25 Feb. 1893–1894, A. Henry 123 (holotype, US).

Through a wide range of herbarium and field investigations, two variable foliar trends in *Pyrenaria microcarpa* have been determined: from oblong to obovate in shape and from acuminate to acute to obtuse to blunt at the apex, which resulted in the establishment of a few ambiguous species, including *Tutcheria ovalifolia*, *T. symplocifolia*, *T. taiwanica*, and *C. buisanensis*. Hereby, those species with leaves obovate in shape and obtuse to blunt at the apex are treated as the variety *ovalifolia*.

Distribution and habitat. Fujian, Guangdong, Hainan, and northern Taiwan, China. Forests below 100 to 1000 m (Yang, 1997).

6. *Pyrenaria spectabilis* (Champion) C. Y. Wu & S. X. Yang, comb. nov. Basionym: *Camellia spectabilis* Champion, *Hooker's J. Bot. Kew Gard. Misc.* 3: 310. 1851. *Thea spectabilis* (Champion) Kochs, *Bot. Jahrb. Syst.* 27: 595. 1900. *Tutcheria spectabilis* (Champion) Dunn, *J. Bot.* 46: 324. 1908. TYPE: China. Hong Kong: Hong Kong Island, 1847, *Champion s.n.* (holotype, K).

Tutcheria brachycarpa Hung T. Chang, *Acta Sci. Nat. Univ. Sunyatseni* 22(2): 109. 1983. Syn. nov. TYPE: China. Guangxi: Jinxiu (Yaoshan), S. S. Sin 328 (holotype, IBSC).

The type specimen of *Tutcheria brachycarpa* shows no essential difference from *P. spectabilis*. It is unreasonable to retain it as a species.

6a. *Pyrenaria spectabilis* (Champion) C. Y. Wu & S. X. Yang var. ***spectabilis***

Distribution and habitat. Fujian, Guangdong, Guangxi, and Hong Kong, China; northern Viet-

nam. Broadleaf evergreen forests between 300 and 1500 m (Yang, 1997).

6b. *Pyrenaria spectabilis* (Champion) C. Y. Wu & S. X. Yang var. ***greeniae*** (Chun) S. X. Yang, comb. et stat. nov. Basionym: *Tutcheria greeniae* Chun, *J. Arnold Arbor* 9(2–3): 129. 1928. TYPE: China. Guangdong: North River region, Pan lin tsze, in open woods, 25 Dec. 1927, W. Y. Chun 5937 (holotype, IBSC; isotypes, A, PE).

Tutcheria austrosinica Hung T. Chang [as “austro-sinica”], *Acta Sci. Nat. Univ. Sunyatseni* 22(2): 107. 1983. Syn. nov. TYPE: China. Guangdong: Yangchun, Heweishan, Meizi Region, 7 June 1957, *Lab. Geobot. Inst. Bot. Austro-Sin.* 4258 (holotype, IBSC).

Tutcheria rostrata Hung T. Chang, *Acta Sci. Nat. Univ. Sunyatseni* 22(2): 106. 1983. Syn. nov. TYPE: China. Guangdong: Yangchun, Heweishan to Sanchahe, 19 Oct. 1957, W. T. Lin 30962 (holotype, CANT).

Pyrenaria turbinata S. X. Yang, *Chin. J. Appl. Environm. Biol.* 3(3): 281. 1997. Syn. nov. TYPE: China. Guangxi: Nanning, cultivated in Guangxi Forest Institute (introduced from Hexian), 24 Oct. 1991, S. X. Yang & W. J. Zhang 91041 (holotype, KUN).

The fruit of this taxon is quite variable in pericarp thickness (from 1 to 2, even to 4 mm), locule numbers (ranging from 3, 4, to 5), apex shape (from acute to obtuse to blunt), which bridge these morphological gaps between *Tutcheria austrosinica*, *T. rostrata*, *Pyrenaria turbinata*, and *T. greeniae*.

Distribution and habitat. Southern Fujian, Guangdong, Guangxi, southern Hunan, and southern Jiangxi, China. Broadleaf evergreen forests between 300 and 1200 m (Yang, 1997).

7. *Pyrenaria wuiana* (Hung T. Chang) S. X. Yang, comb. nov. Basionym: *Tutcheria wuiana* Hung T. Chang, *Acta Sci. Nat. Univ. Sunyatseni* 6(1): 29. 1961. TYPE: China. Guangdong: Luoding, Jiayi, Yadaodashan Hill, 6 Sep. 1959, B. S. Wang & L. C. Xu 0014 (holotype, SYS).

Based on the leaf-like bractlets, large and oblong sepals, and acuminate fruit, the previous taxonomic treatment reducing this species into *Pyrenaria grandiflora* (Wu) Ming & S. X. Yang (Yang, 1997) should be corrected.

Distribution and habitat. Western Guangdong and eastern Guangxi, China. Forests between 800 and 900 m (Yang, 1997).

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